

IN THE CLAIMS

Listing of Claims

1. (Cancelled)
2. (Cancelled)
3. (Previously Presented) A mold apparatus for producing molded optical elements, said apparatus comprising:
 - a first mold unit for defining mold cavities and flow passageways;
 - a second mold unit having an integrated mold surface for sealing against said first unit, said integrated mold surface containing a plurality of patterns for molding optical patterns in the optical elements;
 - a mechanism for moving said first unit toward said second unit to form said flow passageways; and
 - mold pins for defining said mold cavities, said mold pins being located in said first mold unit.
4. (Previously Presented) The mold apparatus of claim 3, wherein said first mold unit has a front face opposed to said mold surface of said second mold unit, and wherein said flow passageways are formed in said front face.
5. (Withdrawn) A mold apparatus for producing molded optical elements, said apparatus comprising:
 - a first unit for defining mold cavities and flow passageways; and

a second mold unit having an integrated mold surface for sealing against said first unit, said integrated mold surface containing a plurality of patterns for molding optical patterns in the optical elements; and

wherein said first mold unit is removable, and wherein said apparatus is arranged to receive other first mold units to produce products of different sizes and shapes.

6. (Cancelled)

7 (Withdrawn) A mold apparatus for producing molded optical elements, said apparatus comprising:

a first mold unit for defining a plurality of mold cavities and flow passageways;

a second mold unit having a mold surface for sealing against said first unit, said mold surface containing a corresponding plurality of patterns for molding optical patterns in the optical elements, said optical patterns being located on a single flat metal puck covering the plurality of mold cavities and said flow passageways; and

means for removing said metal puck, such that other pucks may be installed in said apparatus to produce products having different optical characteristics.

8. (Withdrawn) The apparatus of claim 7, wherein said patterns include micro-refractive patterns.

9. (Withdrawn) The apparatus of claim 7, wherein said patterns include diffraction patterns.
10. (Cancelled)
11. (Cancelled)
12. (Currently Amended) A method for making molded optical elements, said method comprising the steps of:
- providing a single metal puck with a plurality of optical patterns;
 - locating said single metal puck against a mold surface to seal a plurality of mold cavities and flow passageways formed upon said mold surface; and
 - subsequently, molding optical elements within said mold cavities such that said optical patterns of said single metal puck are formed in said optical elements; and
 - moving said mold surface toward said metal puck to form said flow passageways; and
 - using mold pins to define the thicknesses of said mold cavities.
13. (Original) The method of claim 12, further comprising the step of flowing molten resin across said mold surface in radial directions toward such cavities.
14. (Original) The method of claim 13, further comprising the step of using said metal puck to enclose said flow passageways.

15. (Withdrawn) A method for making molded optical elements, said method comprising the steps of:

providing a single metal puck with a plurality of optical patterns;

locating said single metal puck against a mold surface to seal a plurality of mold cavities and flow passageways formed upon said mold surface ; and

subsequently, molding optical elements within said mold cavities such that said optical patterns of said single metal puck are formed in said optical elements; and

separating said mold surface from said metal puck, and locating another mold surface against said metal puck to form different size mold cavities.

16. (Withdrawn) A method for making molded optical elements, said method comprising the steps of:

providing a single metal puck with a plurality of optical patterns;

locating said single metal puck against a mold surface to seal a plurality of mold cavities and flow passageways formed upon said mold surface ; and

subsequently, molding optical elements within said mold cavities such that said optical patterns of said single metal puck are formed in said optical elements; and

separating said puck from said mold surface, and providing another metal puck having patterns formed therein to form optical elements having different optical characteristics.

17. (Currently Amended) A method of making a mold apparatus, said method comprising the steps of :

forming a plurality of optical patterns in a ~~single~~ metal puck;

locating said ~~single~~ metal puck against a mold unit to seal a plurality of mold cavities and flow passageways formed upon said mold surface; and

locating mold pins in said mold unit to define the thickness of said mold cavities.

18. (Original) The method of claim 17, wherein said step of forming said patterns includes the step of using an analog gray scale mask to pattern photoresist material.

19. (Original) The method of claim 17, wherein said step of forming said patterns includes ion milling.

20. (Original) The method of claim 17, wherein said step of forming said pattern includes electron beam lithography.

21. (New) The apparatus of claim 3, wherein the integrated mold surface is a single continuous surface that patterns multiple optical elements.

22. (New) The apparatus of claim 21, wherein the mold pins enter the mold cavities and can be varied in length to change the thickness of the mold cavities.

23. (New) The method of claim 12, wherein the optical patterns on the metal puck is continuous and patterns multiple optical elements.

24. (New) The method of claim 17, wherein the optical patterns on the metal puck is continuous and patterns multiple optical elements.